

# Durst 606

Operating Instructions



# Enlarger and Copying Apparatus

Only when the following instructions are adhered to strictly can the highest efficiency be obtained from this apparatus and claims entertained under the guarantee. The DURST 606 is dismantled into the following components, packed in a corrugated cardboard box providing full protection:

1. Baseboard
2. Enlarger head with lens panel fitted
3. Socket, column and arm
4. Electrical installation with lampholder
5. IXONEG negative carrier
6. Film cups
7. Opal disc with accessories
8. Shim plate for socket with 4 screws and nuts, also 4 screws for cups
9. Lens, if ordered.

## Assembling the apparatus

Detatch column (1) with arm (2) from socket. Screw socket to baseboard. Fit shim plate with nuts to underside of baseboard. Now introduce column (1) into socket (4) and lock tightly with knob (5). The film cups (6) should be screwed to the right and left of the enlarger head (1).

Secure enlarger head to arm (2) with wheel (33). Set red catch (7) so that lamphouse (8) and mirror housing (9) can be removed; remove packing materials from inside and carefully clean mirror (10), condenser lens (11) and all other components. Insert opal lamp into its mount (12) from above (check that the mains voltage is correct). It is advisable to use opal lamps of 100 watts, with a maximum bulb diameter of 70 mm (3 in.). Replace lamphouse (8) and mirror housing (9) and secure with catch (7) (Figs. II, III, IV, V).

## Illumination

If instead of the opal lamp described, a projection lamp with bayonet mount is to be used, the opal disc (13) must be fitted to the lamp housing (8) and secured as shown in fig. III by sliding the safety bar (14) into the guide (15) and fixing it with grub screws (16). Insert projection lamp into the slots of the lamp holder (12), and give 1/4 turn to secure contact. 100 - 150 W projection

lamps with up to 30 mm (1 1/4") diameter bulbs are suitable. In comparison with an opal lamp, a projection lamp of equal wattage gives a 50% brighter illumination on the baseboard. When using opal lamps the opal disc must in all cases be removed as otherwise the light output of the enlarger will be very much reduced.

## Negative carrier

The IXONEG negative carrier (17) is provided with paired adjustable masks which can be set for all negative sizes from 18×18 mm to 6×6 cm (2 1/4×2 1/4"). The film (18) is held flat between the AUDA 70 optical glass plate (19) and a plastic frame (20), virtually eliminating damage to the film and the formation of Newton's rings (figs. VI, VIa). To exchange the negative carrier glasses move the retaining flange sideways by means of small knob. The lever (21) must be in a horizontal position when inserting the carrier (17) into the head (3).

## Inserting Negatives

Without pulling out the IXONEG negative carrier, the lever (21) should be lifted and the film (18) inserted from the front, with the emulsion side towards the baseboard. By releasing the lever (21) the negatives are automatically pressed flat. The adjustable masks (22) are then closed to the smallest possible size by means of the milled screw (23). For advancing the film, lift lever (21). A swivelling holder (24) is provided for positioning single negatives which are best inserted when the IXONEG negative carrier is removed from the enlarger head.

## Red filter

The red filter, built into the enlarger head, is conveniently operated by the milled ring (25).

## Lenses

With the DURST 606 all negative formats

from 6×6 cm (2½×2½") down to 35 mm, and even to 8 mm, can be enlarged. For enlarging the 6×6 cm (2½×2½") format, a lens having a minimum focal length of 75 or 80 mm is needed; generally, such a lens will also yield excellent results from smaller formats. However, in order to obtain bigger enlarging factors from smaller negative formats, lenses having shorter focal lengths are required. The following minimum focal lengths should be observed:

4×4 cm (1½" square) negative size:  $f=60$  or 65 mm;

35 mm to 30×40 mm (1¼×1½") negative size:  $f=50$  mm.

The obtainable enlarging factors for the 50 mm and 75 mm lenses are indicated on the nameplate of the enlarger.

The use of SCHNEIDER DURST enlarging lenses is recommended; these are carefully selected and checked at our works.

### Lens boards

According to its focal length, each lens has to be fixed into the barrel (26) by means of its proper lens panel. As standard outfit the IXOPLA lens (27) is supplied, being suitable for almost all 75 or 80 mm lenses; a special semisunk lens panel IXOTI (41) is available at an extra charge for lenses having the same focal length but a long mount. IXOTI lens panels (41) with M 39 (Leica) thread can also be used for 75 or 80 mm lenses, having normal mount with M 25 (Schneider) thread, by means of the IXODAP connection ring (42), which is delivered on request. For 60 or 65 mm lenses the same semi-sunk IXOTI lens panel (41) is required.

50 mm lenses are fitted into the proper IXOTUB lens tube (43), which is supplied separately.

For removing the lens panel, the milled screw (28) should be loosened and retightened after the lens panel is replaced.

### Reduction

For all work at image scales below 1:1 (same size), the smallest lens aperture should be used.

A 75 mm lens fitted to the raised side of the IXOPLA (27) will give a smallest image scale of approx.  $\times 1.2$  linear; the same lens fitted to the raised side of IXOTI (41) will yield a maximum reduction of approx.  $\times 0.8$  linear, and a 60 or 65 mm lens on IXOTI (41) a  $\times 0.7$  linear reduction. The maximum reduction of  $\times 0.5$  linear can be attained by using a 50 mm lens on the raised side of IXOTUB (43).

Each lens is intended to be used with the negative format it covers.

### Glassless enlarging

For enlarging from 35 mm negatives without the lower glass plate AUDA 70 (19), the use of the DIFMA insertion mask (Fig. VII) is recommended, which is available as an extra and can be simply inserted into the IXONEG carrier. Single negatives can easily be centered and fixed with the swivelling holder (24).

Glassless enlarging is standard for negatives up to 35 mm; great care must be taken for bigger formats. The 2½" square format (actual image area about 2⅛" square) may still be considered to be within admissible limits for glassless enlarging, providing negatives are not exposed to heat for too long a time. Following the many requests of DURST owners, we now supply AUDIX masks for the 2½" square format, at an extra charge.

### Lamp Centering

Set the enlarger head half-way up the column by turning the handwheel (41), then place a sheet of white paper on the baseboard (29) and switch on the lamp switch (30). Either insert a test negative (fig. VIII) into the IXONEG negative carrier (figs. VI and VIa) or use the single negative holder (24) as a focusing aid by pushing it into the centre of the field. Focus sharply by means of the knurled ring (26), after which the test negative or focusing aid should be removed. Loosen the knob (32) at the side; the lamp can now be centered by means of the downwards-protruding extension of the lamp socket (31), until an absolutely even illumination of the projection plane is achieved.

The centering of projection lamps should be done with the utmost care (Note: Use opal disc [13]). When the lamp is properly adjusted, knob (32) should be tightened until a slight resistance is felt (fig. IX). The DURST 606 is now ready for use. Expose only by using switch (30).

### Distortion Correction

For correcting distortions the apparatus is swung sideways by loosening slightly the spoked wheel (33) and pressing the red marking (34). In this way, the enlarger can be tilted into any position required, and locked there by tightening the spoked wheel (33).

Note! Tilting should not exceed an angle of  $15^{\circ}$  when a projection lamp is used, since otherwise the lamp will burn out. The lens should be stopped down considerably when correcting distortions.

### Colour Work

is best executed by using a projection lamp. The filter drawer (35) holds up to six  $7 \times 7$  cm ( $2\frac{3}{4}$ " square) correction filters. The filter drawer can be opened and closed safely whilst working, since the light beam of the lamp is obstructed automatically. For colour enlargements, the maximum illumination obtainable and the sharp rendition of details are the most decisive factors. For  $24 \times 36$  mm miniature negatives, the standard  $f=75$  focal length lens of the DURST 606 is highly advantageous, therefore.

### Copying

Unlock the red locking bar (7) and lift out the mirror housing (9) which should be turned through  $180^{\circ}$  before being re-inserted (the condenser lens will then be facing the front of the apparatus); re-lock with bar (7) (fig. II). Instead of the IXONEG carrier the UR copying cassette (fig. XI) should be inserted (matt surface of ground glass towards the lens). The inspection lens (36) permits convenient checking of definition and image area of the original to be copied. The RILU lighting unit is highly suitable for illuminating the original to be copied (or for exposing photographic plates in the UR cassette). The RILU is equipped with 4 independently adjustable reflectors which can also be operated singly (fig. X). Care should always be taken to eliminate disturbing reflections on the original. The plate holder (37), loaded with a suitable plate, should be placed with its slide (38) downwards into the UR cassette, which is then inserted below the ground glass (39) and locked with the safety catch (40) before withdrawing the slide (38). Use switch (30) for making exposures with the RILU. Note: Always use small apertures for copying!

Besides the UR standard copying cassette, the URIKO precision copying cassette is available (Fig. XII). URIKO differs from the UR in that it can be rigidly attached to the enlarger head and in having a guide rail which assists the introduction of the plate-holder into the frame and also the withdrawal of the darkslide. Two  $6.5 \times 9$  cm plate-holders are supplied with the URIKO; reducing adaptors for  $4.5 \times 6$  cm plates ( $1\frac{5}{8} \times 2\frac{1}{4}$  in.) as well as sheet film adaptors for the sizes  $6.5 \times 9$  cm and  $4.5 \times 6$  cm are available separately.

### Camera Stand

The enlarger head (3) can be removed after undoing the star wheel (33). The baseboard with its column and arm can then be used as a camera stand; the attachment screw of the star wheel has a  $3/8$  in. thread, which will fit most cameras. Cameras with a  $1/4$  in. threaded tripod screw will require an adaptor.

### Maintenance of the DURST 606

All chromed parts should be cleaned with petrol and lightly lubricated with acid-free bone oil or vaseline.

Condensers, lenses and carrier glasses should be cleaned with a soft, nonfluffy linen rag. Use methylated spirit sparingly on very soiled lenses or glasses. Never leave lamps burning when not in actual use. When changing lamps lift lamp cover first and permit to cool.

When not in use, the enlarger should be protected with the plastic dust cover, available as an extra. The IXONEG carrier should always remain in the enlarger head.

### Other accessories:

#### IXONEMA mask

This metal mask is used to prevent Newton's rings when enlarging from  $24 \times 36$  mm miniature negatives. The IXONEMA is attached to the upper part of the IXONEG negative carrier beneath the condenser.

#### DURST MIN (Fig. XIII)

This all-metal  $5 \times 7$  in. masking frame for amateur use is produced with the same precision as any expensive professional apparatus. The MIN has two fixed cover masks with easily legible scales, two adjustable slides and a white base. The right-angle paper stop with guiding pins prevents displacement of the paper.

#### DURST 243 (Fig. XIV)

The DURST 243 masking frame relieves the operator of much manual and mental labour when enlarging on different paper sizes. It consists of a cast frame, which is coated with stoved lacquer and impervious to chemical action, with independently adjustable mask bands. Any required width of margin, from  $\frac{5}{32}$  in. to  $1\frac{3}{8}$  in. (4 to 35 mm) can be obtained with the aid of these mask bands

and a paper stop, which is adjusted by means of a milled knob. All paper formats up to 10×12 in. (24×30 cm) can be used. The frame can be easily adapted to formats in inches, and can be supplied with or without a baseboard covered with Formica.

#### DURST PENTACOLOR (Fig. XV)

This safelight is equipped with five inter-

changeable colour filters - orange, light red, ruby red, pale green and white. The filters are fitted in a turret, so that the type of light required for the darkroom can be instantly adjusted. A heat-absorbing filter prevents blistering or warping of the filters. Direct or indirect lighting can be obtained by swivelling the lamp, which can be either attached to the wall or placed on the table.


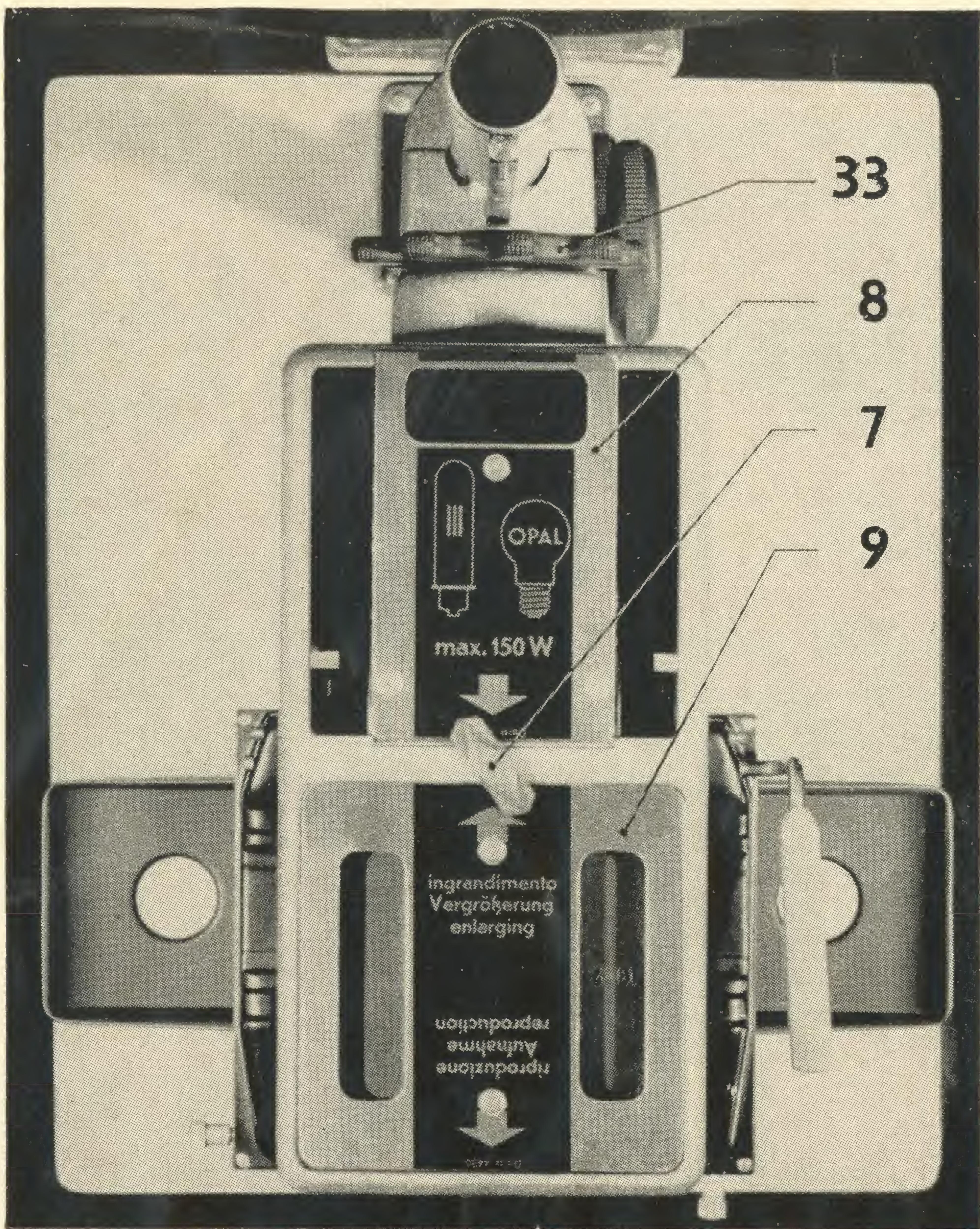


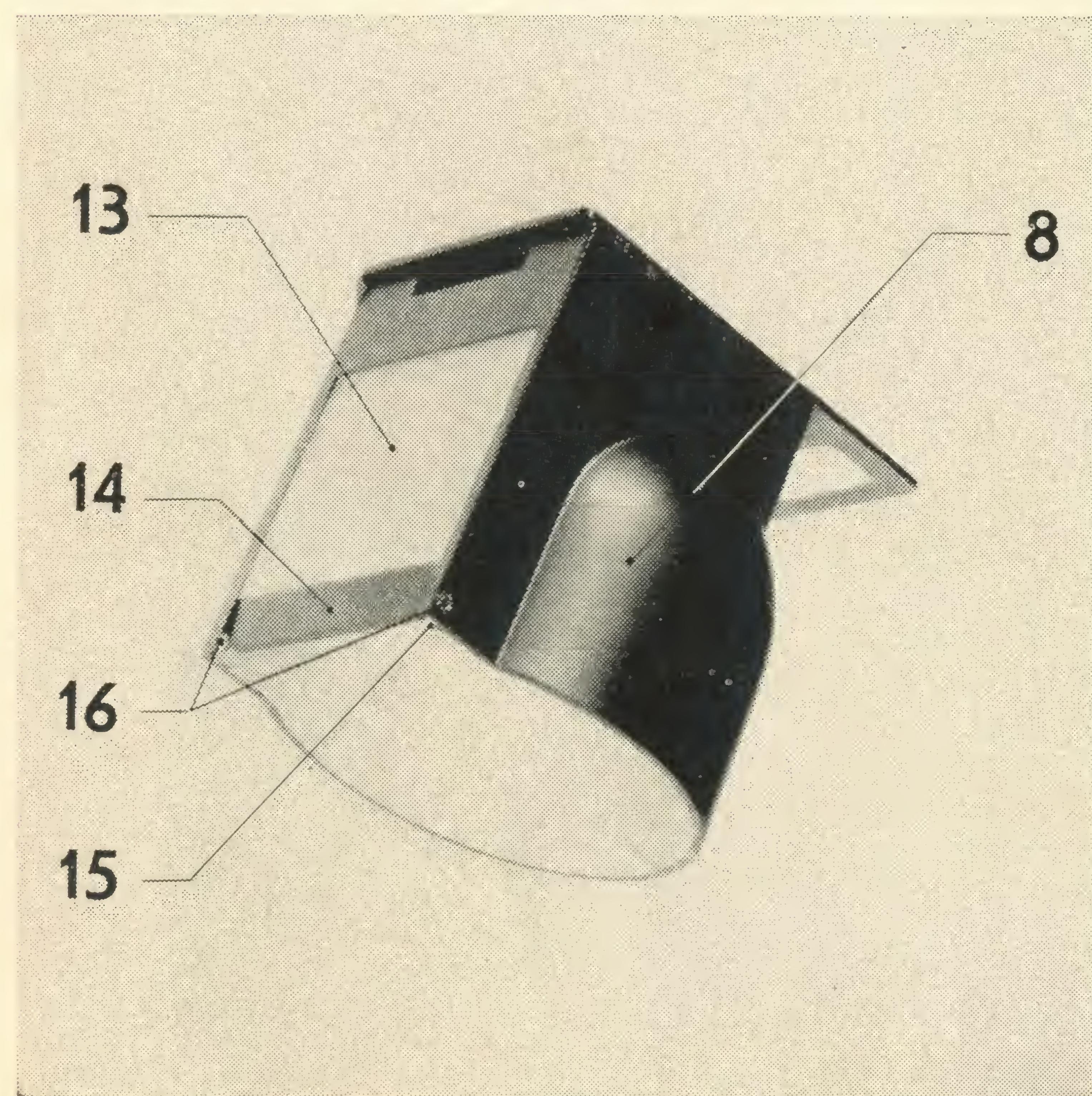
Fig. 1



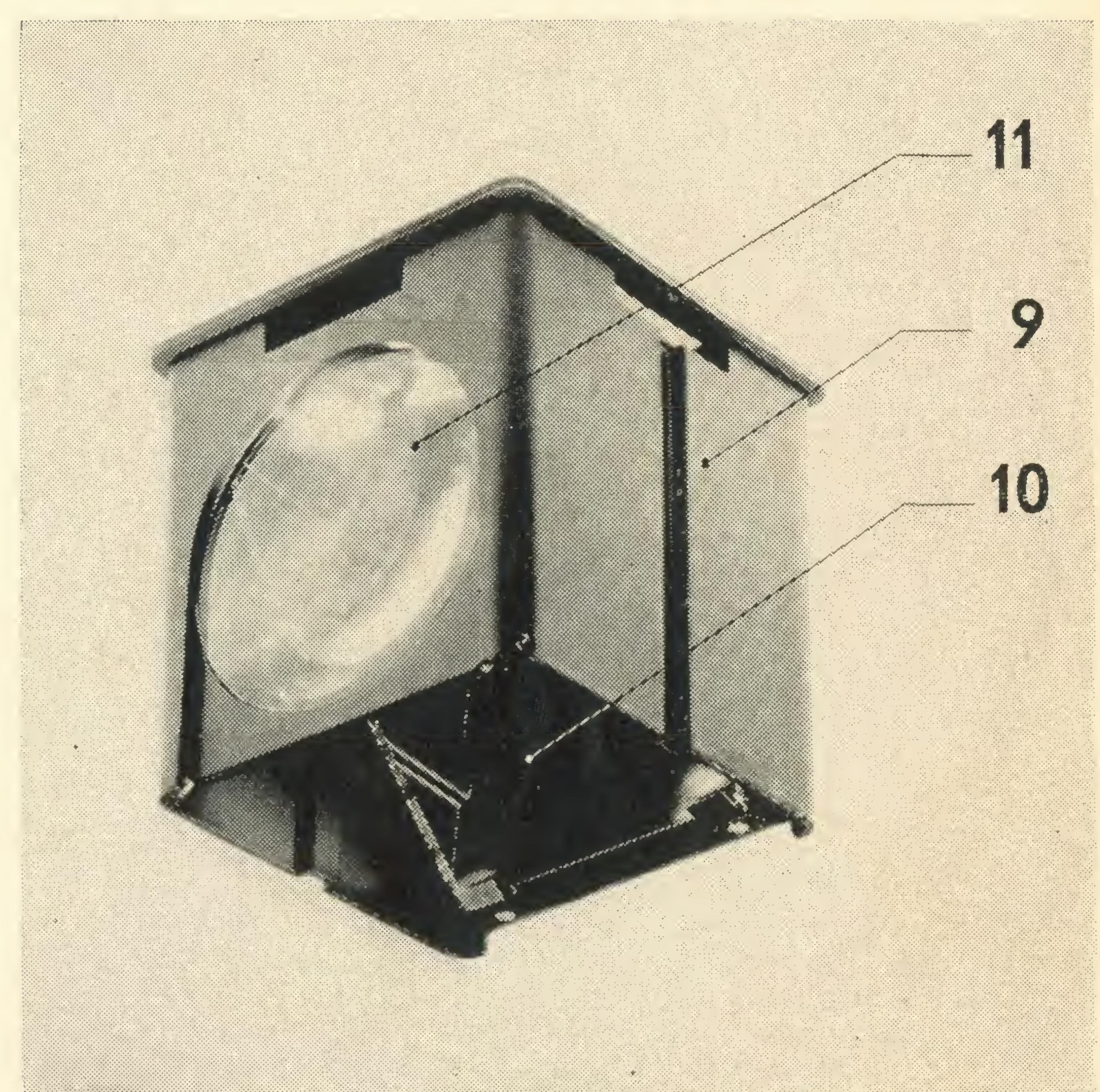
**Fig. II**



**Fig. III**



**Fig. IV**



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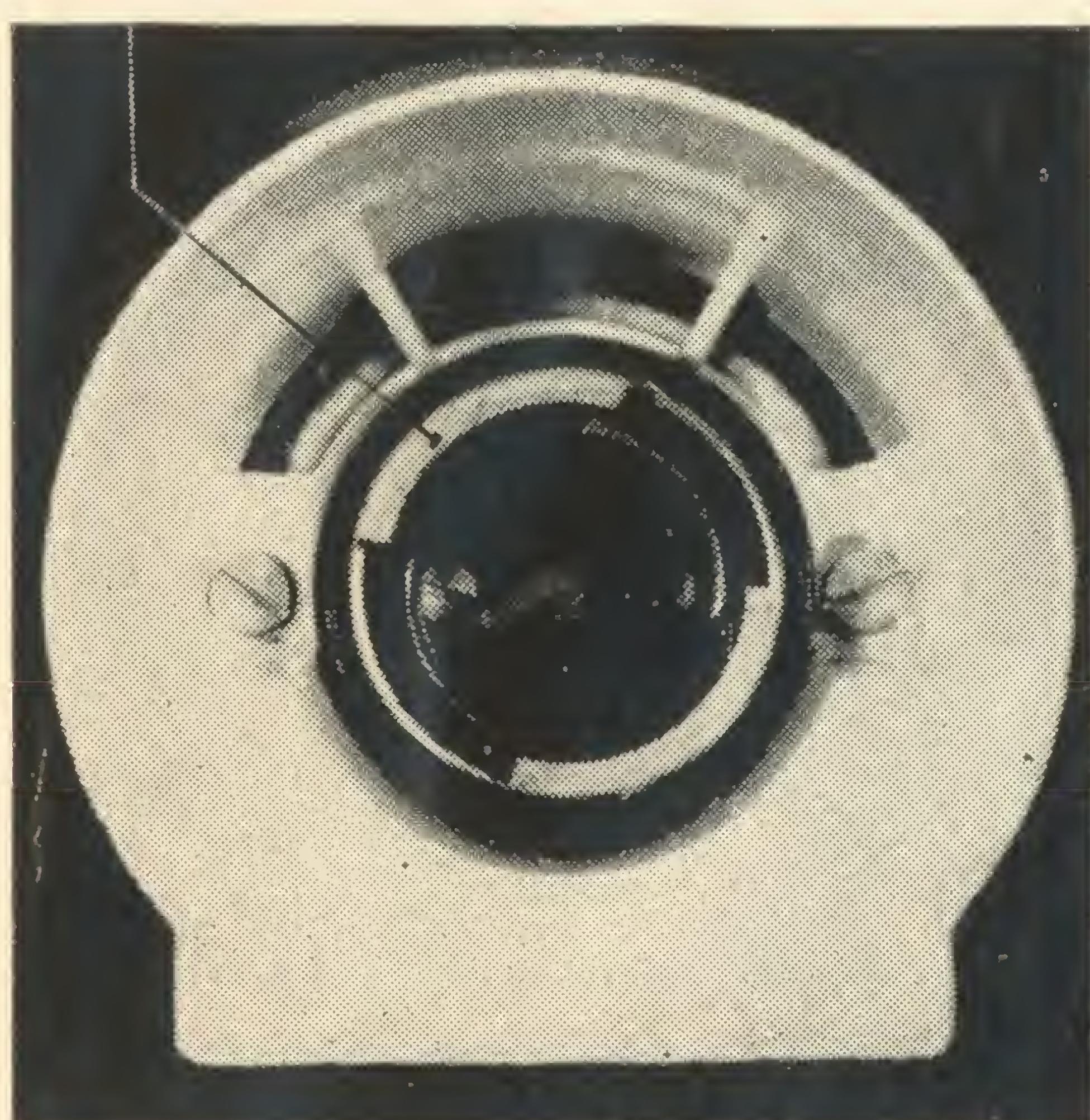
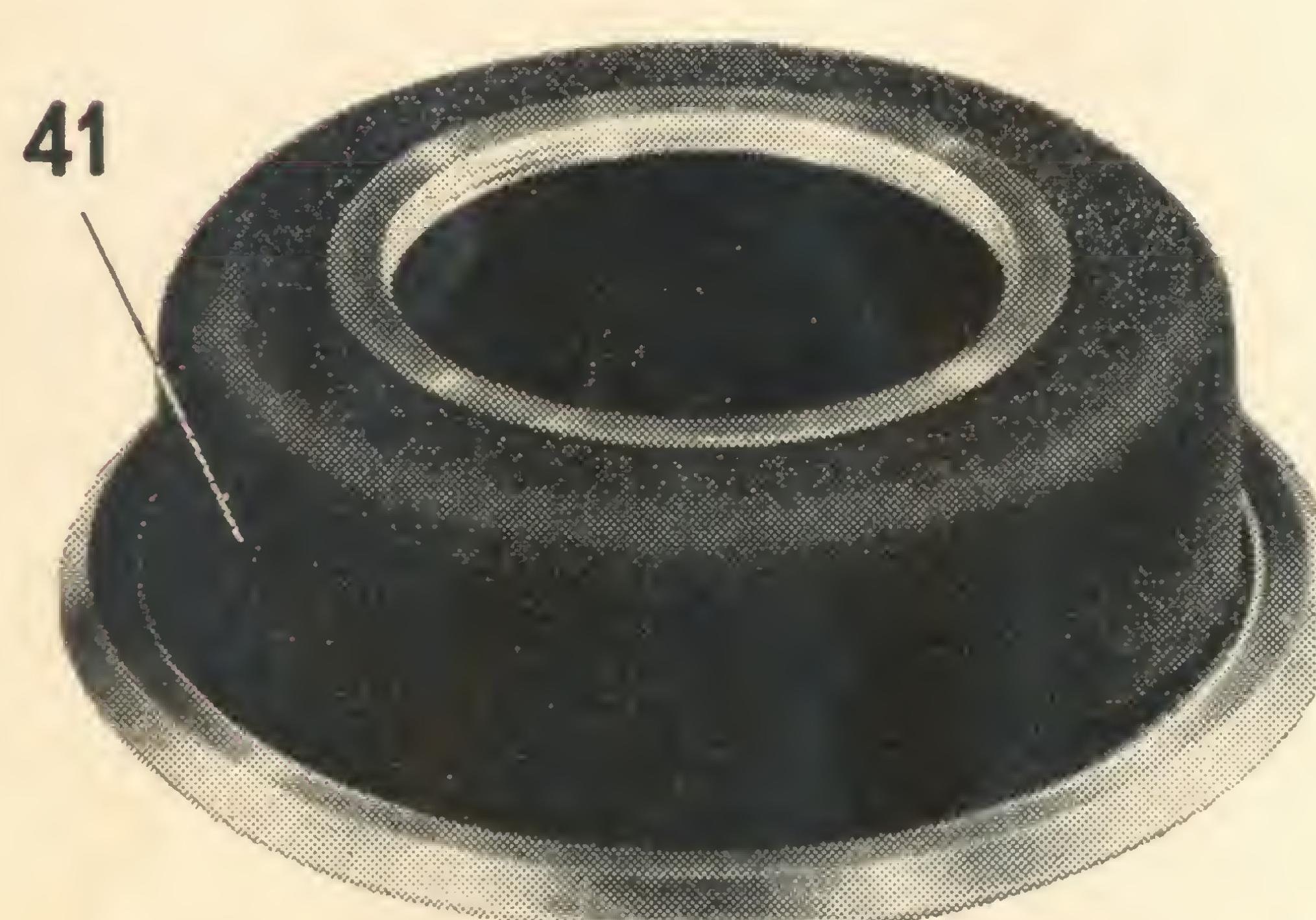


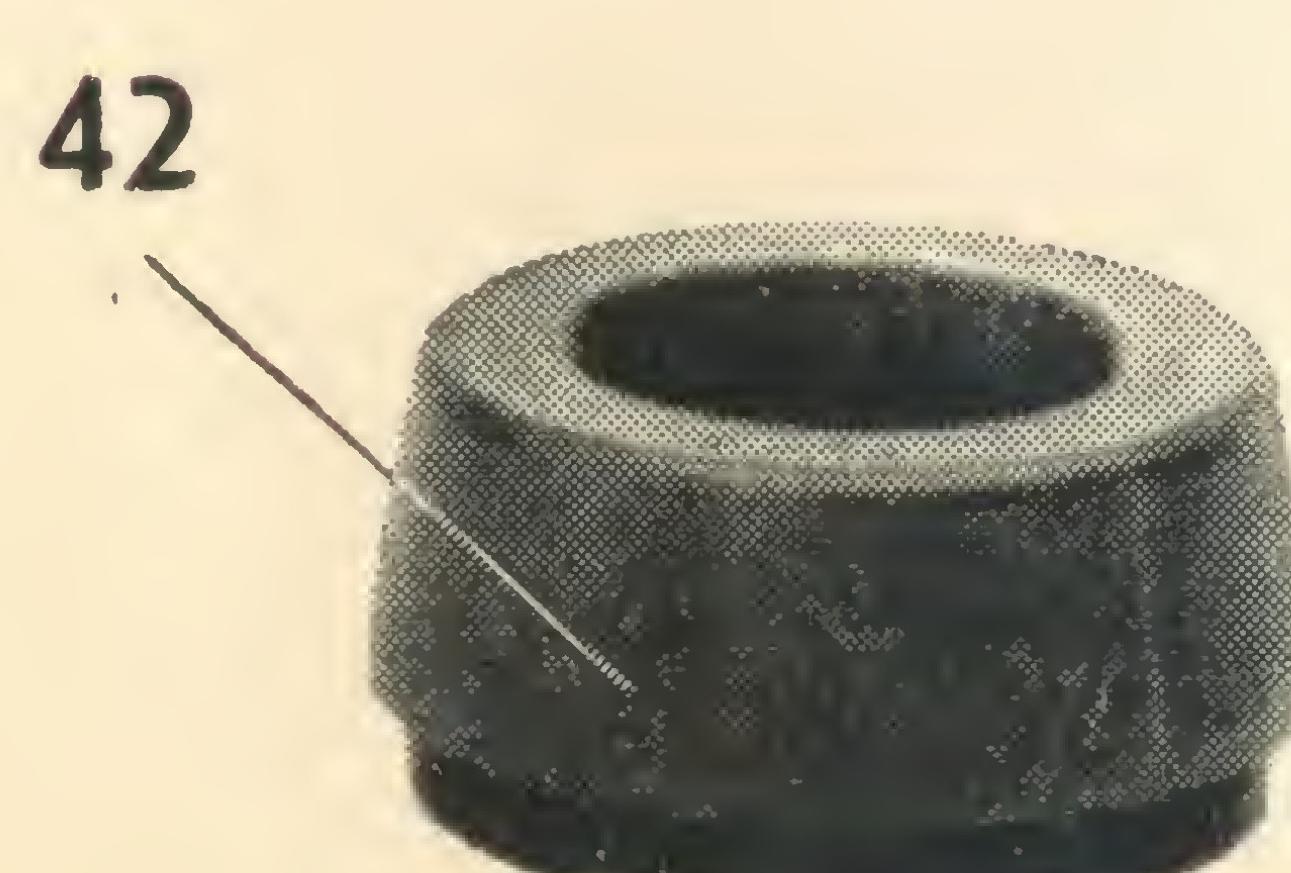
Fig. V



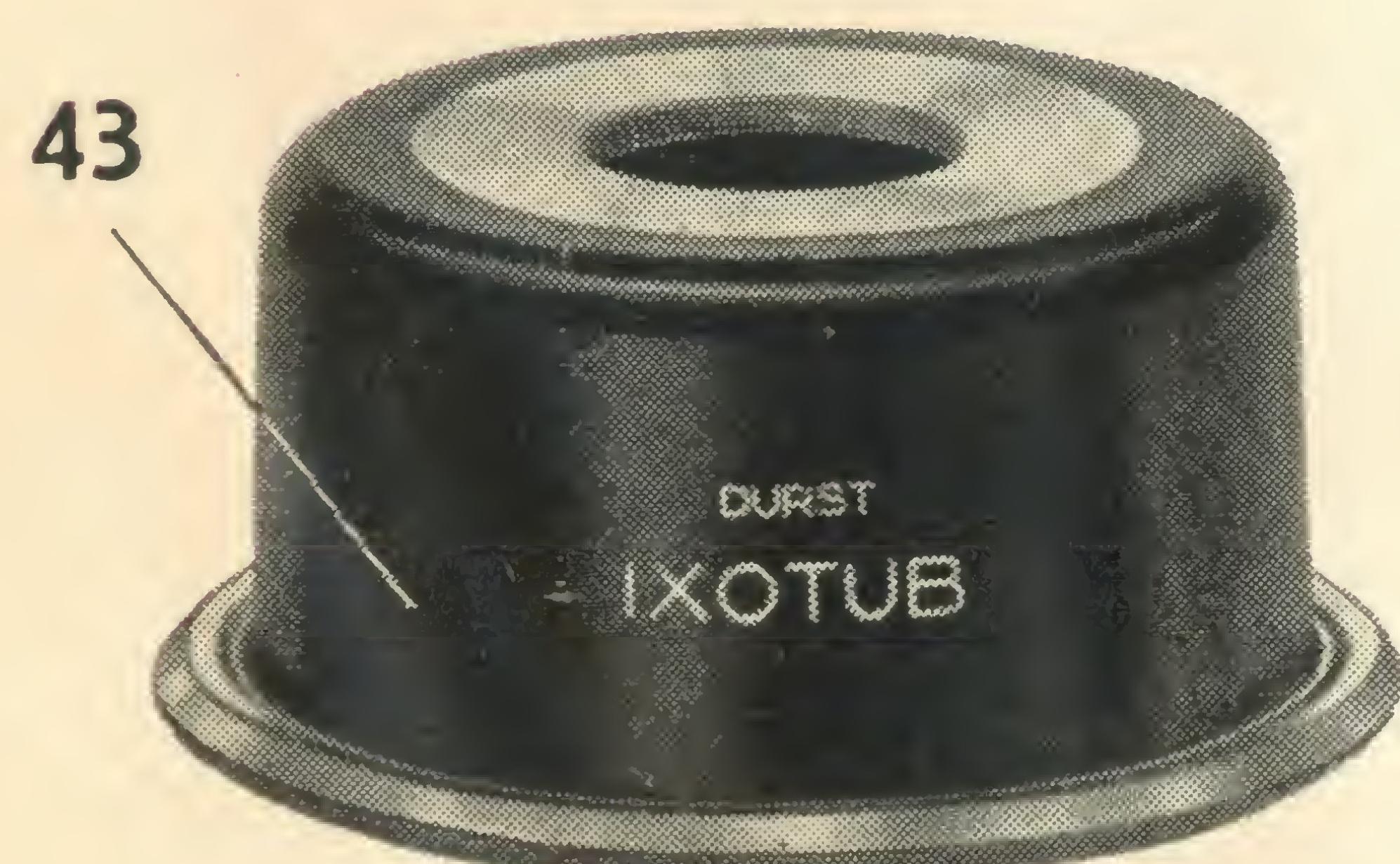
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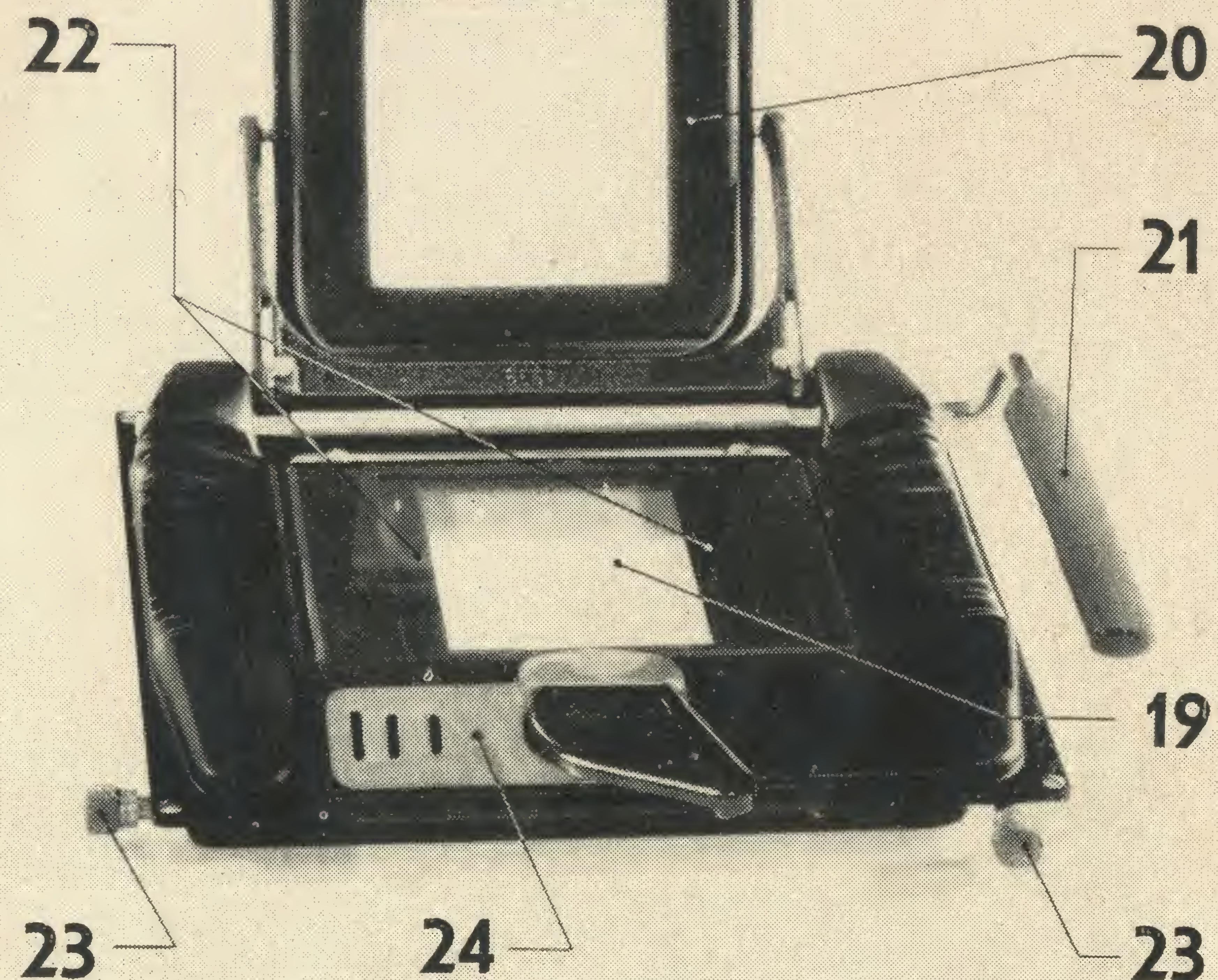


Fig. VI

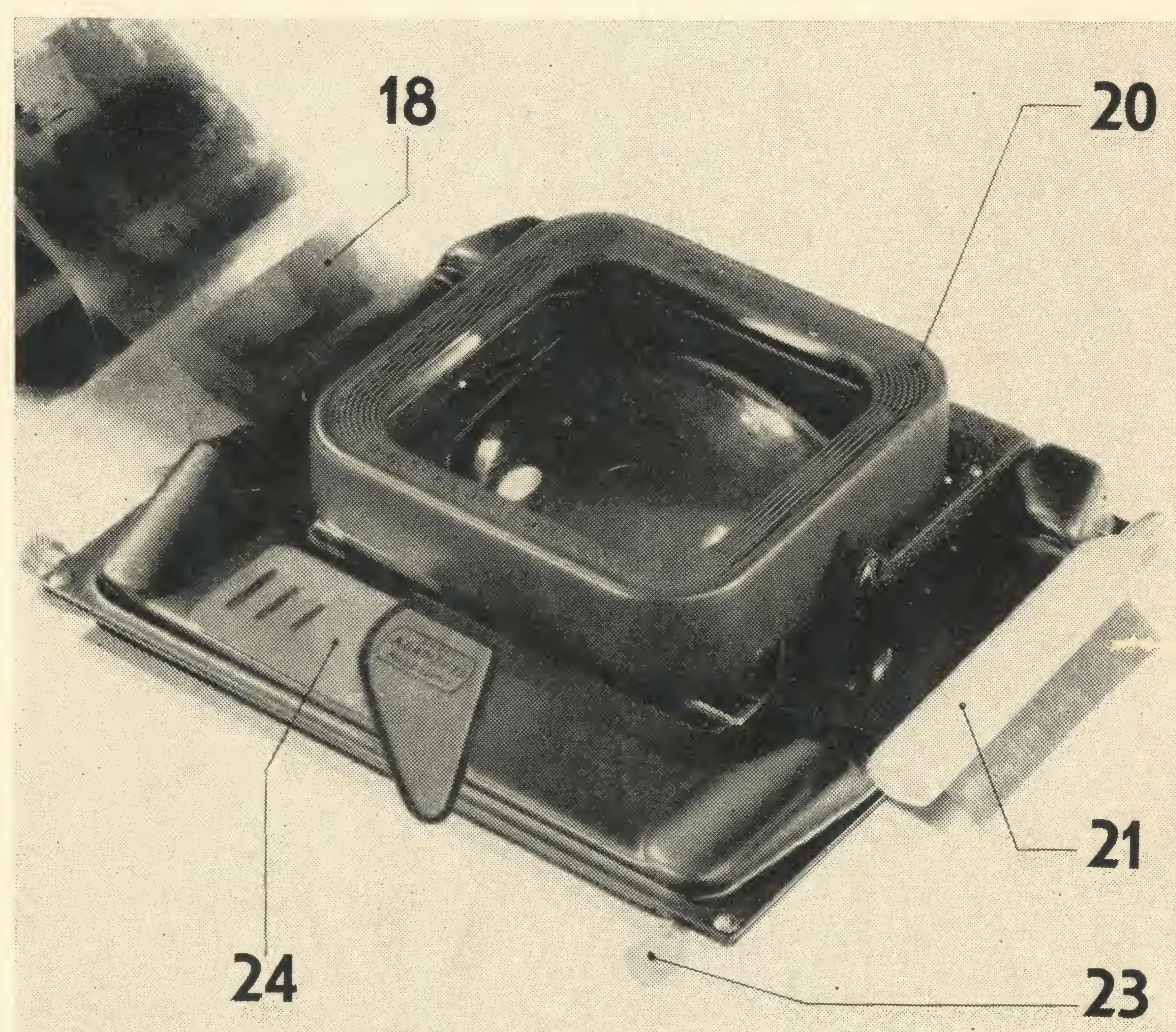


Fig. VI a

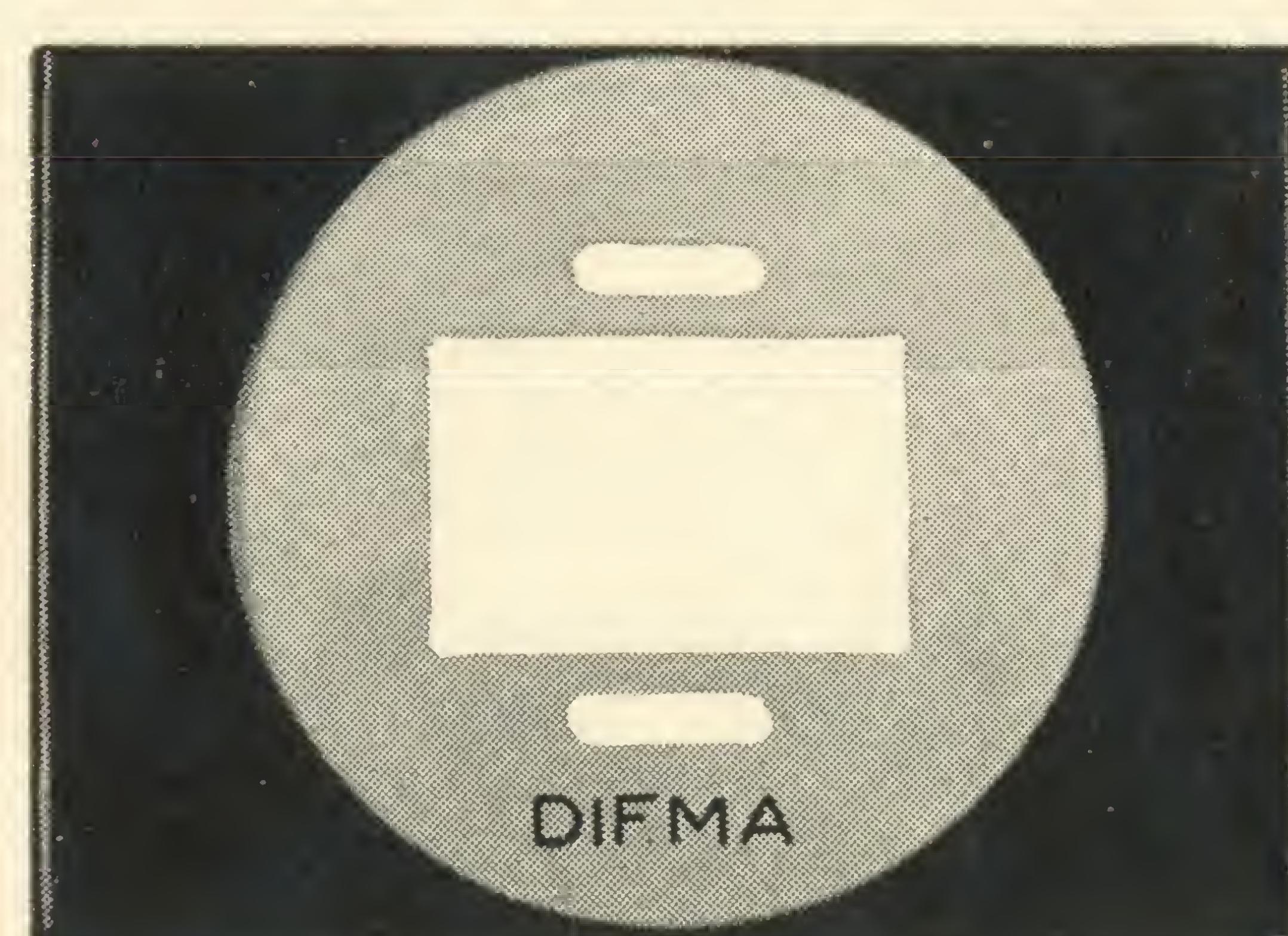


Fig. VII Difma

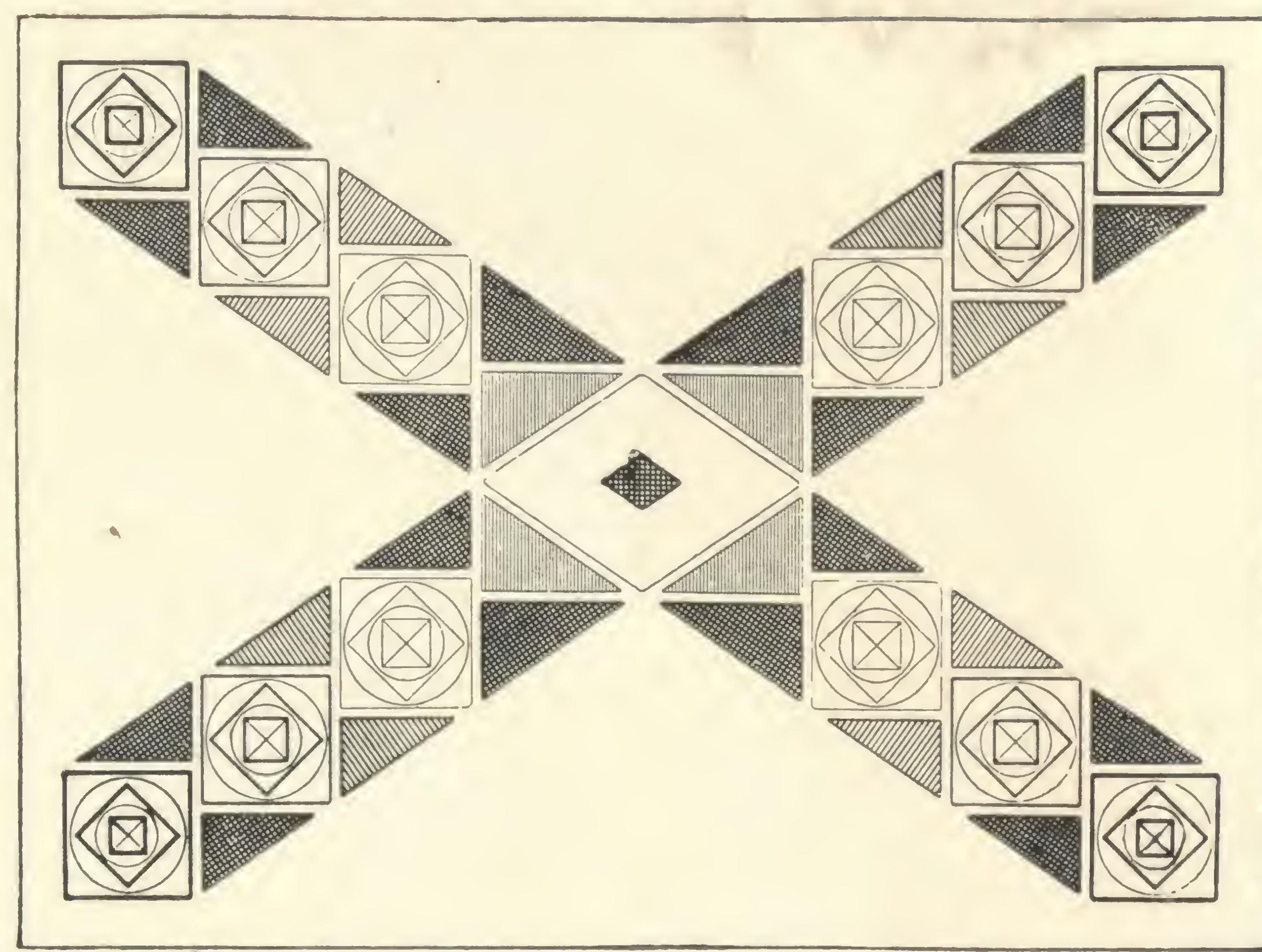


Fig. VIII Test

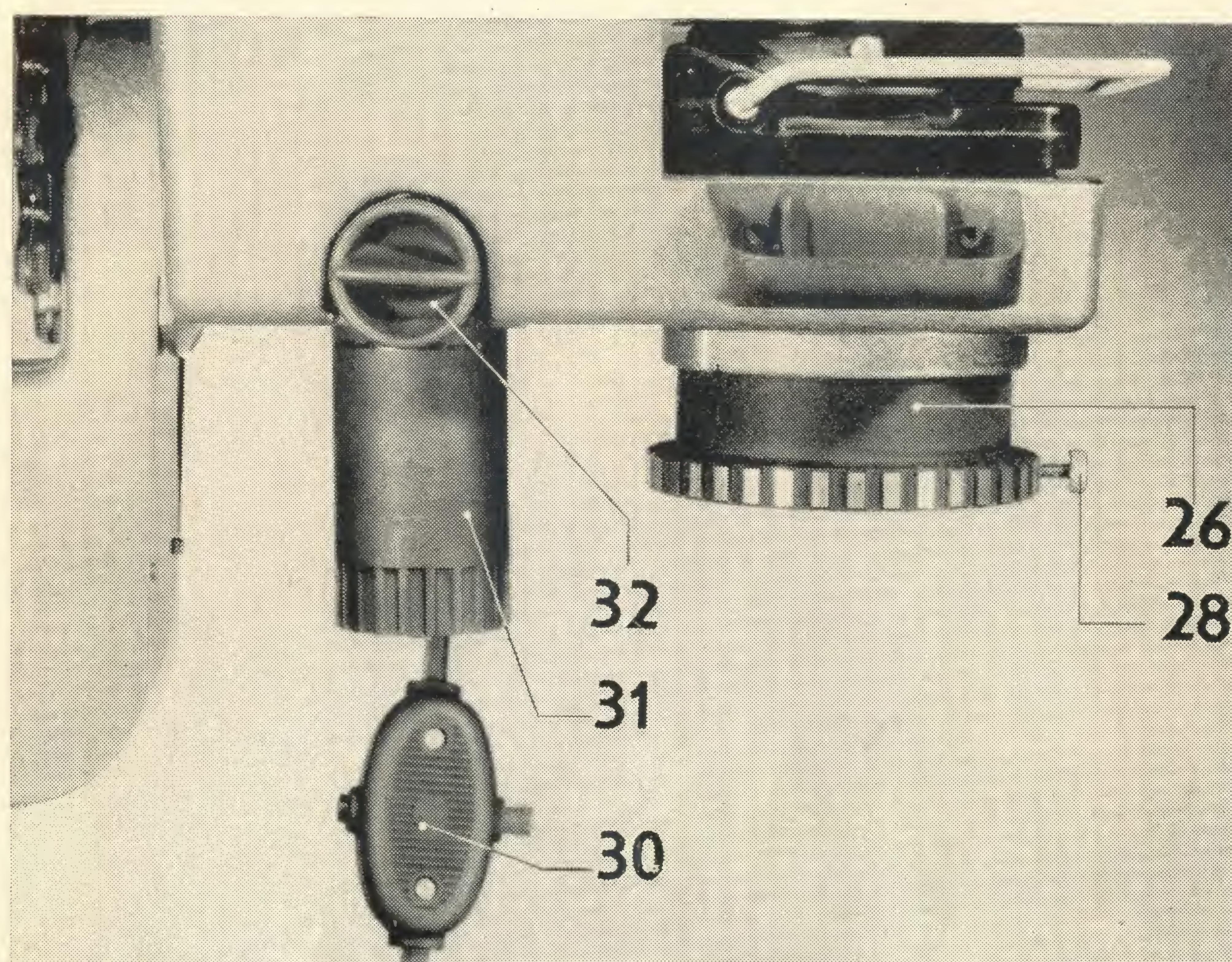


Fig. IX

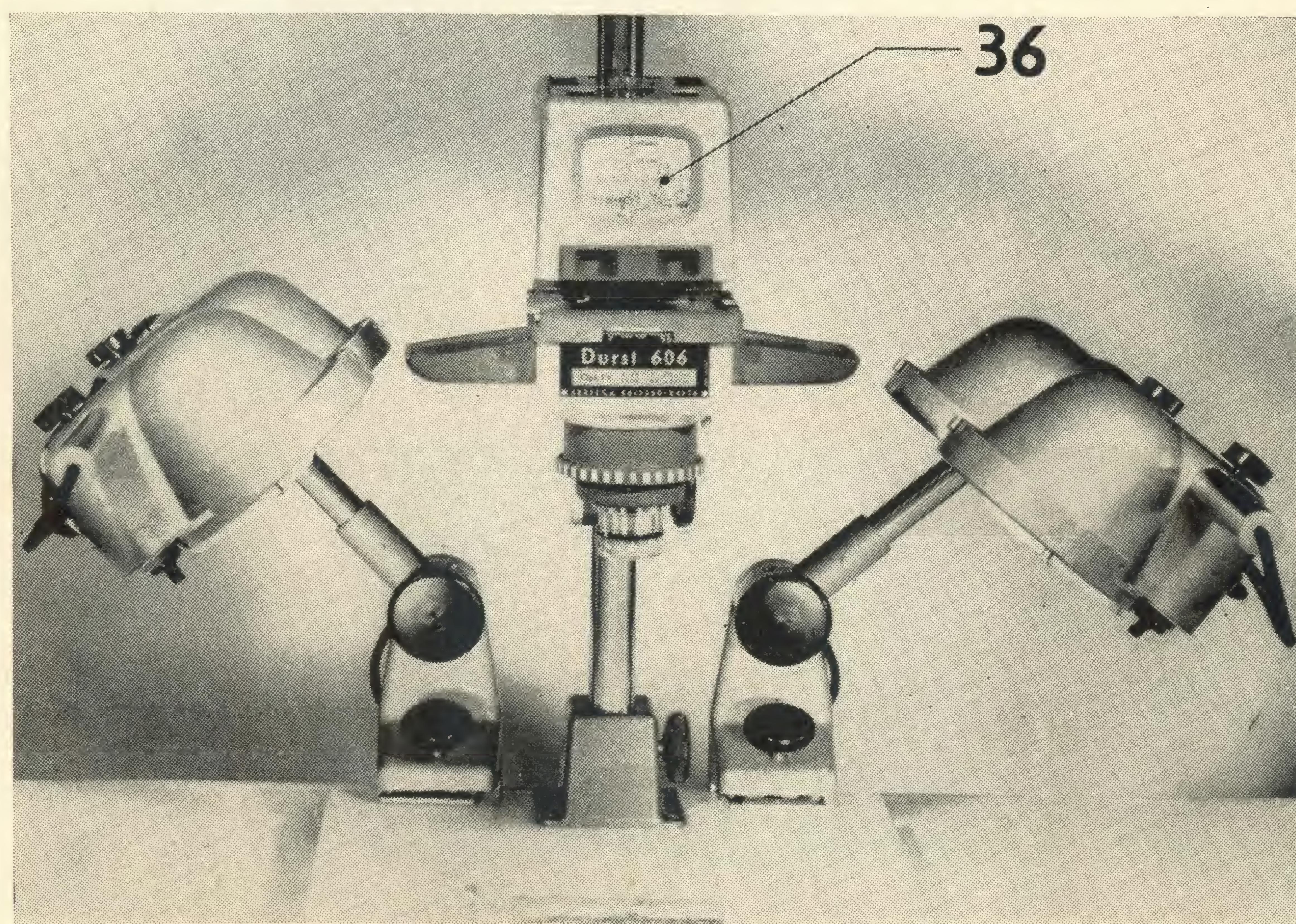
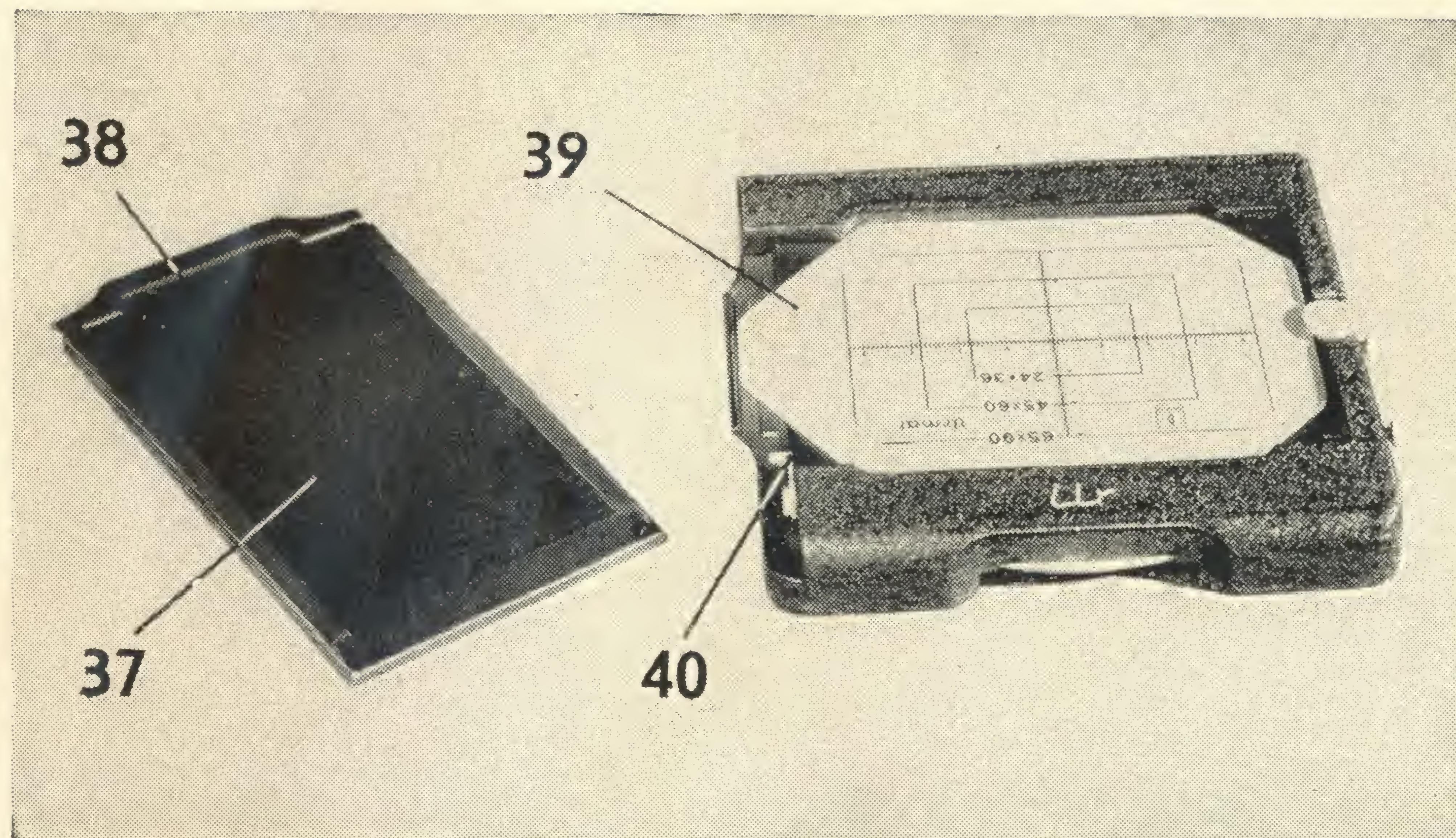
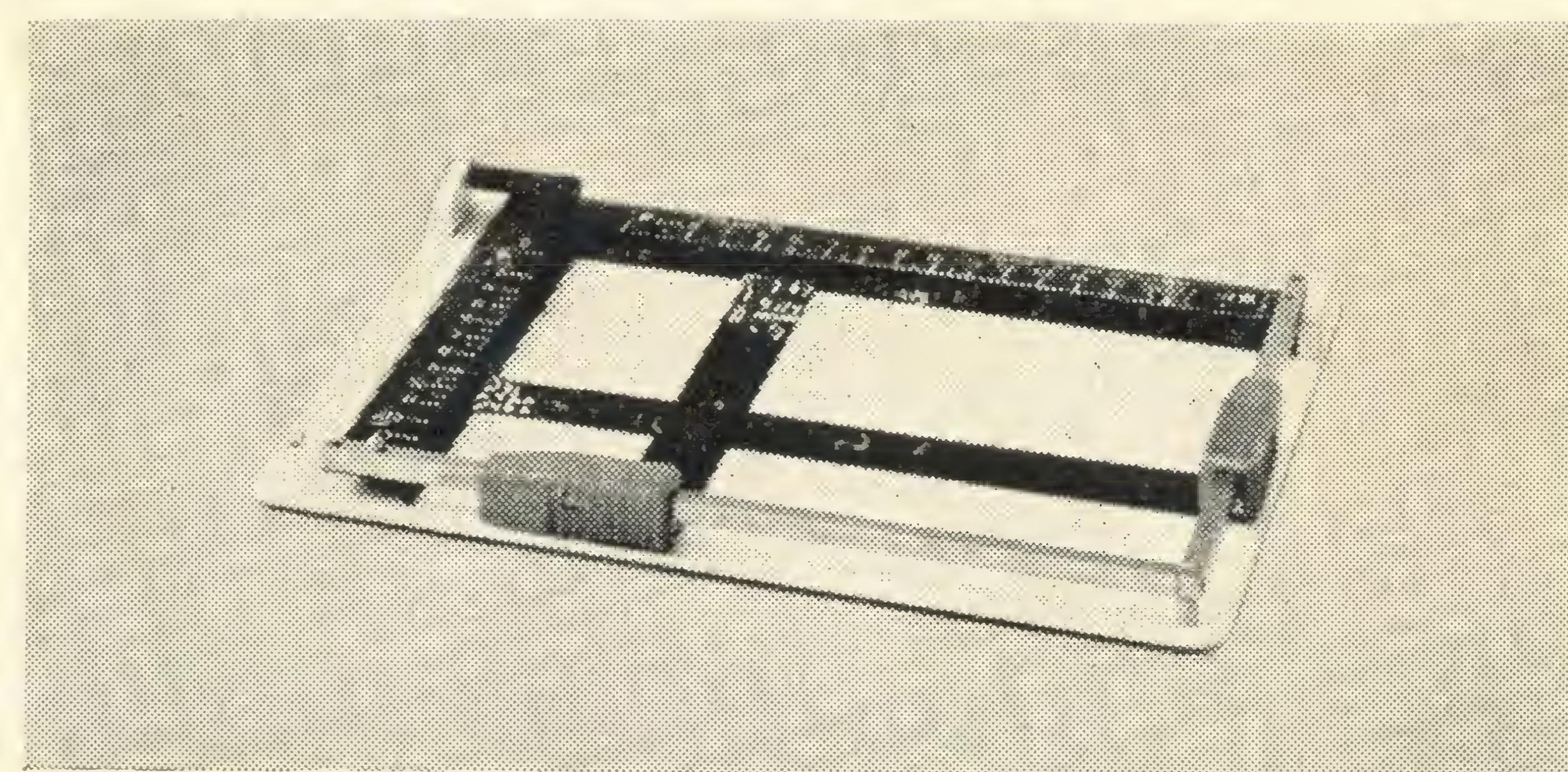
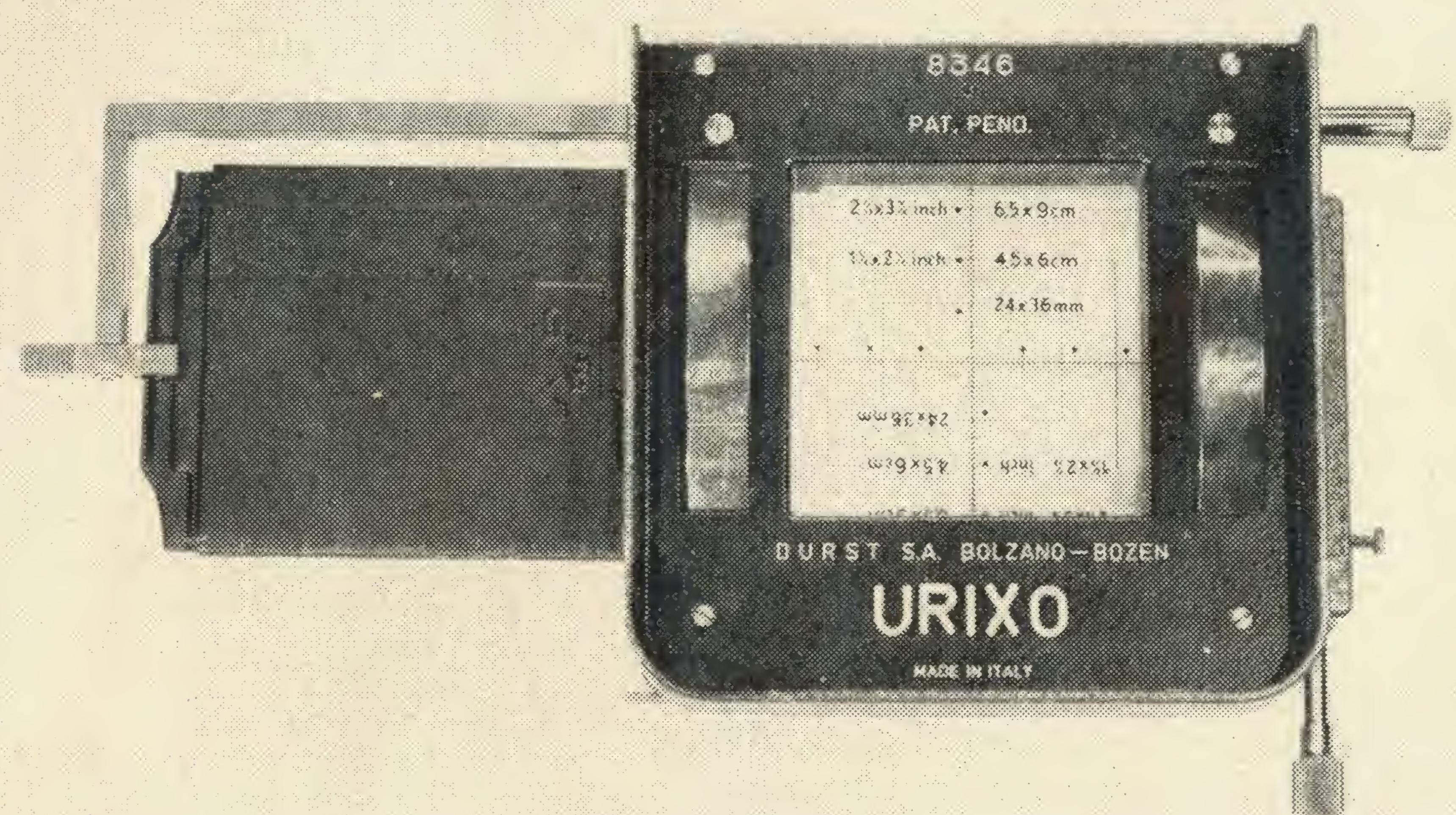


Fig. X

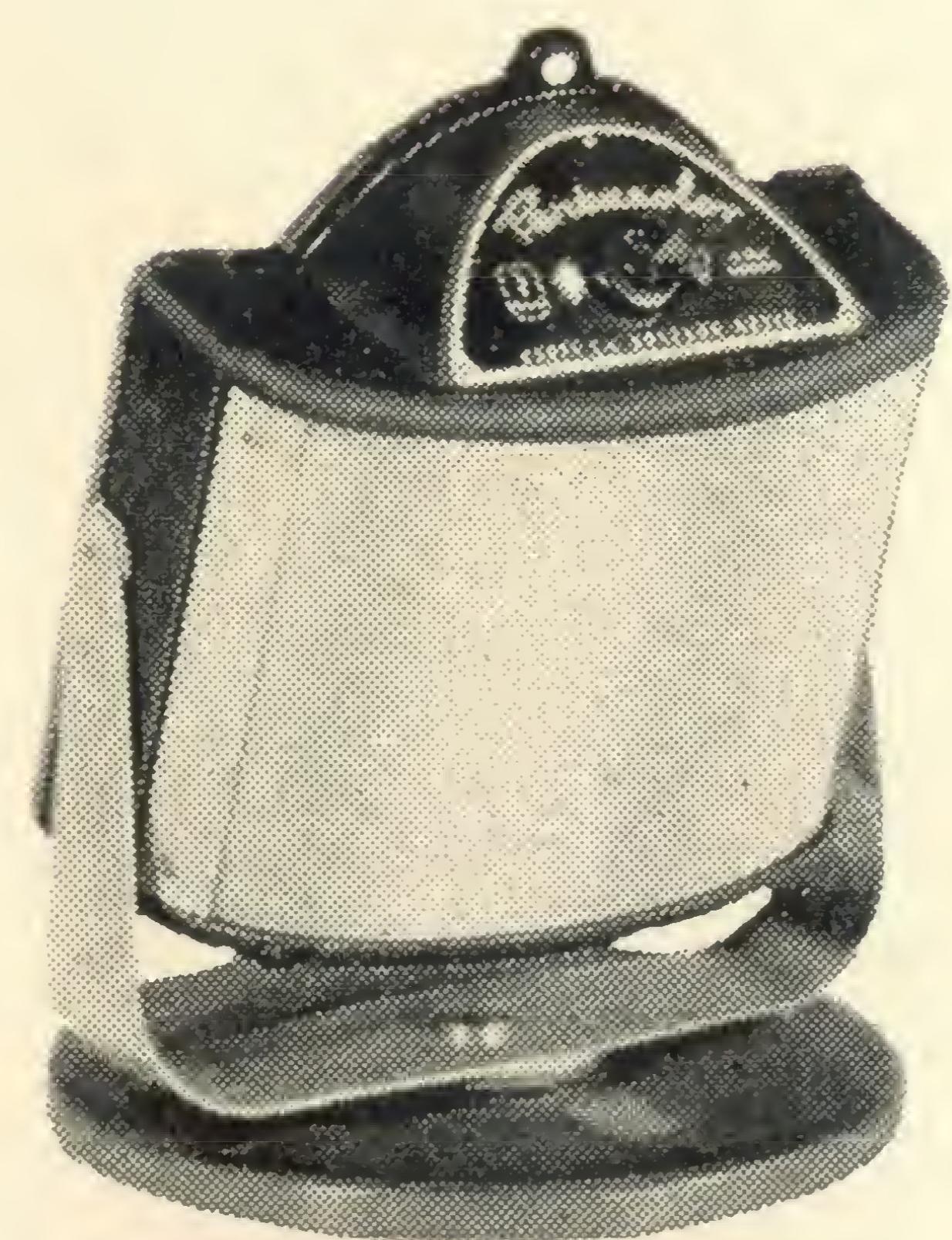
**Fig. XI Ur**



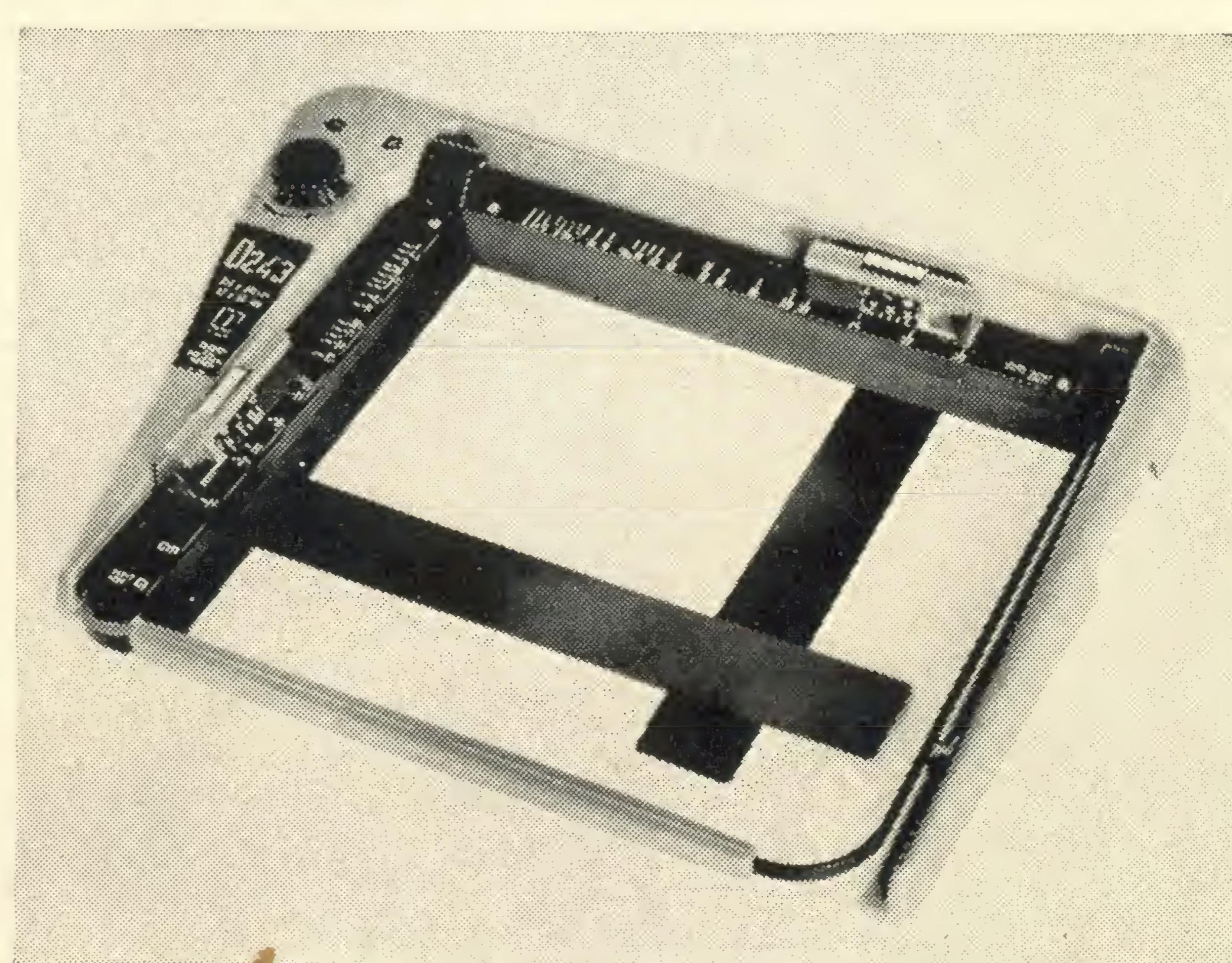
**Fig. XII Urixo**



**Fig. XIII Min**



**Fig. XV Pentacolor**



**Fig. XIV Durst 243**

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**Durst**

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